

topically applying or parenterally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of said ~~patient~~ ^{subject}.

39. A method as recited in claim 36, wherein said administering comprises orally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of said patient.

40. A method as recited in claim 36, wherein said ~~patient~~ ^{subject} is a human or an animal.

41. A method as recited in claim 36, wherein said piperine is administered in an amount in the range of from about ~~0.0004~~ mg to about 0.15 mg per kg of weight of said ~~patient~~ ^{subject} per day.

42. A method as recited in claim 36, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

43. A method as recited in claim 42, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group consisting of vitamin B1, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E and vitamin K, said antioxidants are selected from the group consisting of vitamin A, vitamin C, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said

amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

2 94. A method of increasing nutrient bioavailability in a ~~patient~~ ^{subject} desiring such an increase, comprising administering to said ~~patient~~ ^{subject} a nutritionally effective amount of at least one nutritional material and a potentiating amount of an extract of black pepper, said extract of black pepper having a higher concentration of piperine than natural black pepper.

10 9 45. A method as recited in claim 44, wherein said administering comprises topically applying or parenterally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of said ~~patient~~ ^{subject}.

11 9 46. A method as recited in claim 44, wherein said administering comprises orally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of said ~~patient~~ ^{subject}.

12 9 47. A method as recited in claim 44, wherein said ~~patient~~ ^{subject} is a human or an animal.

13 9 48. A method as recited in claim 44, wherein said piperine is administered in an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of said ~~patient~~ ^{subject} per day.

14 9 49. A method as recited in claim 44, wherein said nutritional material

comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

15 50. A method as recited in claim ¹⁴ 49, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group consisting of vitamin B1, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E and vitamin K, said antioxidants are selected from the group consisting of vitamin A, vitamin C, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

16 51. A method of improving gastrointestinal absorption and systemic utilization of nutritional materials in a patient ^{subject} desiring such improvement, comprising administering to ^{subject} ~~said patient~~ a nutritionally effective amount of at least one nutritional material and a gastrointestinal absorption and systemic utilization of nutritional materials improving amount of piperine.

17 52. A method as recited in claim ¹⁶ 51, wherein said piperine comprises at least one member selected from the group consisting of synthetically made piperine, extract

from black pepper and extract from piper longum.

~~18~~ 53. A method as recited in claim ~~51~~¹⁶, wherein said administering comprises topically applying or parenterally administering to said ~~patient~~^{subject} a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of said ~~patient~~^{subject}.

~~19~~ 54. A method as recited in claim ~~51~~¹⁶, wherein said administering comprises orally administering to said ~~patient~~^{subject} a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of said ~~patient~~^{subject}.

~~20~~ 55. A method as recited in claim ~~51~~¹⁶, wherein said ~~patient~~^{subject} is a human or an animal.

~~21~~ 56. A method as recited in claim ~~51~~¹⁶, wherein said piperine is administered in an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of said ~~patient~~^{subject} per day.

~~22~~ 57. A method as recited in claim ~~51~~¹⁶, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble fat-soluble vitamins, amino acids, minerals and antioxidants.

~~23~~ 58. A method as recited in claim 57, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and 0.0004 to about 0.15 mg/kg of body weight of said patient.

~~24~~ 59. A method of improving gastrointestinal absorption and systemic utilization of nutritional materials in a ~~patient~~^{subject} desiring such improvement, comprising administering to said ~~patient~~^{subject} a nutritionally effective amount of at least one nutritional material and a

potentiating amount of an extract of black pepper, said extract of black pepper having a higher concentration of piperine than natural black pepper.

~~25~~ 60. A method as recited in claim ²⁴ 59, wherein said administering comprises topically applying or parenterally administering to said ^{subject} patient a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of ^{subject} said patient.

~~26~~ 61. A method as recited in claim ²⁴ 59, wherein said administering comprises orally administering to said ^{subject} patient a composition piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of ^{subject} said patient.

~~27~~ 62. A method as recited in claim ²⁴ 59, wherein said ^{subject} patient is a human or an animal.

~~28~~ 63. A method as recited in claim ²⁴ 59, wherein said piperine is administered in an amount in the range of from about ~~0.0004~~ ^{0.00004} mg to about 0.15 mg per kg of weight of said ^{subject} patient per day.

~~29~~ 64. A method as recited in claim ²⁴ 59, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

~~30~~ 65. A method as recited in claim ²⁹ 64, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group consisting of vitamin B1, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E

and vitamin K, said antioxidants are selected from the group consisting of vitamin A, vitamin C, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

~~31~~ 66. A method of providing an increase in nutrient induced thermogenesis in a ~~subject~~ ^{subject} ~~patient~~ desiring such an increase, comprising administering to said ~~patient~~ ^{subject} a nutritionally effective amount of at least one nutritional material and a nutrient induced thermogenesis enhancing amount of piperine.

~~32~~ 67. A method as recited in claim ~~66~~ ³¹, wherein said piperine comprises at least one member selected from the group consisting of synthetically made piperine, extract from black pepper and extract from piper longum.

~~33~~ 68. A method as recited in claim ~~66~~ ³¹, wherein said administering comprises ~~subject~~ ^{subject} ~~patient~~ topically applying or parenterally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of ~~subject~~ ^{subject} ~~patient~~.

~~34~~ 69. A method as recited in claim ~~66~~ ³¹, wherein said administering comprises ~~subject~~ ^{subject} orally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of said ~~patient~~ ^{subject}.

~~35~~ 70. A method as recited in claim ~~66~~ ³¹, wherein said ~~patient~~ ^{subject} is a human or an ~~subject~~ ^{subject}.

animal

34 71. A method as recited in claim 66, wherein said piperine is administered in an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of subject patient per day.

37 72. A method as recited in claim 66, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

38 73. A method as recited in claim 72, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group consisting of vitamin B1, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E and vitamin K, said antioxidants are selected from the group consisting of vitamin A, vitamin C, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

39 74. A method of providing an increase in nutrient induced thermogenesis in a subject patient desiring such an increase, comprising administering to said patient a subject

nutritionally effective amount of at least one nutritional material and a potentiating amount of an extract of black pepper, said extract of black pepper having a higher concentration of piperine than natural black pepper.

40 75. A method as recited in claim 74, wherein said administering comprises 39 subject topically applying or parenterally administering to said patient a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of subject patient.

41 76. A method as recited in claim 74, wherein said administering comprises 39 subject orally administering to said patient a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of subject patient.

42 77. A method as recited in claim 74, wherein said patient subject is a human or an animal.

43 78. A method as recited in claim 74, wherein said piperine is administered in 39 D.00004 an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of subject patient per day.

44 79. A method as recited in claim 74, wherein said nutritional material 39 comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

45 80. A method as recited in claim 79, wherein said herbal extracts are selected 44 from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group B1 consisting of vitamin B1, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid

and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E and vitamin K, said antioxidants are selected from the group consisting of vitamin A, vitamin C, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

46 81. A method of providing an increase in lean body mass in a ~~patient~~ ^{subject} desiring such an increase, comprising administering to said ~~patient~~ ^{subject} a nutritionally effective amount of at least one nutritional material and a lean body mass enhancing amount of piperine.

47 82. A method as recited in claim ~~81~~ ⁴⁶, wherein said piperine comprises at least one member selected from the group consisting of synthetically made piperine, extract from black pepper and extract from piper longum.

48 83. A method as recited in claim ~~81~~ ⁴⁶, wherein said administering comprises topically applying or parenterally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of said ~~patient~~ ^{subject}.

49 84. A method as recited in claim ~~81~~ ⁴⁶, wherein said administering comprises orally administering to said ~~patient~~ ^{subject} a composition comprising piperine in an amount of

from about 0.0004 to about 0.15 mg/kg of body weight of said patient.

35. A method as recited in claim 81, wherein said patient is a human or an animal.

36. A method as recited in claim 81, wherein said piperine is administered in an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of said patient per day.

37. A method as recited in claim 81, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

38. A method as recited in claim 87, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba, capsaicin and aconitine, said water-soluble vitamins are selected from the group consisting of vitamin 131, vitamin B2, niacinamide, vitamin B6, vitamin B12, folic acid and vitamin C, said fat-soluble vitamins are selected from the group consisting of vitamin A, vitamin D, vitamin E and K, said antioxidants are selected from the group consisting of vitamin A, vitamin E, alpha-carotene, transbeta-carotene, betacryptoxanthin, lycopene, lutein/zeaxanthin, pine bark bioflavonals complex, germanium, selenium and zinc, said amino acids are selected from the group consisting of lysine, isoleucine, leucine, threonine, valine, tryptophan, phenylalanine, methionine and L-selenomethionine, and said minerals are selected from the group consisting of calcium, iron, zinc, vanadium, selenium, chromium, iodine, potassium, manganese, copper and magnesium.

54 89. A method of providing an increase in lean body mass in a patient desiring such an increase, comprising administering to said patient a nutritionally effective amount of at least one nutritional material and a potentiating amount of an extract of black pepper, said extract of black pepper having a higher concentration of piperine than natural black pepper.

55 90. A method as recited in claim 89, wherein said administering comprises topically applying or parenterally administering to said patient a composition comprising piperine in an amount of from about 0.00004 to about 0.015 mg/kg of body weight of said patient.

56 91. A method as recited in claim 89, wherein said administering comprises orally administering to said patient a composition comprising piperine in an amount of from about 0.0004 to about 0.15 mg/kg of body weight of said patient.

57 92. A method as recited in claim 89, wherein said patient is a human or an animal.

58 93. A method as recited in claim 89, wherein said piperine is administered in an amount in the range of from about 0.0004 mg to about 0.15 mg per kg of weight of said patient per day.

59 94. A method as recited in claim 89, wherein said nutritional material comprises at least one material selected from the group consisting of herbal extracts, water-soluble vitamins, fat-soluble vitamins, amino acids, minerals and antioxidants.

60 95. A method as recited in claim 94, wherein said herbal extracts are selected from the group consisting of curcumin, boswellin, ashwagandha, ginkgo biloba,